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ÆCIDIUM PHACELIÆ.—Spots large, suborbicular, pallid or greenish-yellow, becoming brown; peridia hypophyllous, crowded, short, numerous, occupying the entire spot, crenulate on the margin; spores subglobose, orange-yellow, .0008 to .001 in. in diameter.

Living leaves of *Phacelia*. Utah, Jones.

CÆOMA COMANDRÆ.—Spores pale, indefinite; sori amphigenous, clustered, at first covered by the epidermis; spores subglobose, ovate or elliptical, orange-yellow, .00095 to .0014 in. long, .0008 to .00095 in. broad.

Living leaves of *Comandra pallida*. Utah, Jones.

PERICONIA GEOPHILA.—Stem two to three lines high, composed of compacted filaments, smooth, smoky-brown; head hemispherical, pulverulent, little broader than the diameter of the stem, whitish or yellowish-white; spores subglobose, colorless, .0002 in. in diameter.

Ground. Washington Territory, Brandegee.

This species is peculiar in its habitat. By some authors it would be referred to the genus *Sporocybe*, the application of these two generic names having been interchanged by different writers.

DENDRODOCHIUM PALLIDUM.—Tufts small, .014 to .028 in. broad, suborbicular, depressed when dry, whitish or pallid; flocci slender, much branched above, colorless; spores abundant, large, oblong or subcylindrical, straight or slightly curved, obtuse, colorless, .0008 to .0015 in. long, .0004 to .0005 in. broad.

Decaying wood. Canada, Prof. J. Macoun.

The filaments are closely and abundantly, but irregularly branched above, so that the spores, which are terminal on the ramuli, are crowded together as if produced in large masses.

PHYSARUM MULTIPLEX.—Stems growing from a thin, subpersistent hypothallus, sometimes confluent at the base; longitudinally furrowed, equal or tapering upward, orange-red; sporangia small, irregular, numerous, confluent into subglobose gyrose-convolute heads, greenish or yellowish-green, with single walls bearing numerous lime-granules; knot-like thickenings of the capillitium very small, sparse, white or yellowish; spores globose, blackish-brown, .0004 in. in diameter.

Decaying wood and bark. Ohio, Morgan.

The species is related to *Physarum polymorphum*, Mont., from which it is distinguished by its bright orange-colored stem and its very numerous small, confluent, greenish sporangia.

Bees and Colored Flowers.—I noticed recently, in a paper of some pretension to scientific accuracy, that Mr. Darwin has shown that insects are attracted to flowers by their color or fragrance, and, therefore, anemophilous flowers are not visited by insects; and Mr. Darwin's experiment with the *Lobelia* was cited in which no flower was visited subsequent to the cutting off of the petals. Now Mr. Darwin does not say this, and his views often suffer from the zeal of those who believe themselves his followers, but have not his talent for accuracy in giving every statement about a case. What Mr. Darwin does say is that color is a "chief" guide, and this can scarcely be questioned. That it is some guide is certain. That it is not the only guide, he himself, with the remarkable candor so characteristic of the man, shows in the same paragraph in which he reports his *Lobelia* experiment. Bees, he says, visited *Geranium phæum* after the petals had fallen, finding by experience that there was some nectar secreted by the apetalous flower. And he repeats that color is only an " approximate " guide. But, for all this, I think Mr. Darwin fails to give full credit to the bee's sagacity. To my mind much that has recently been written about the relation of insects to the color of flowers is but an illustration of the popular idea of "running a thing into the ground," and I think science is served when an exaggeration is—again in popular language—"sat down upon." I thought of this distorted view of Darwin's *Lobelia* experiment to-day while watching honey-bees at work on the flowers of the common snow-drop tree—*Halesia tetraptera*. We know now that there is scarcely a flower with the lower portion tubular, or which offers any obstacle, however slight, to the entrance of the humble-bee, that is not rifled of its sweets by being bored from the outside. Indeed, if bees were really intended to cross-fertilize flowers, the experience of Mr. Darwin with the European humble-bee would excite a smile in those with only an American experience, for indeed the American species are frauds of the first magnitude. They shirk their duty on the shallowest pretence. But though I have had suspicions, I have never been able to satisfy myself that the honey-bee does not perform its duties honestly. Whenever I have noticed it getting honey from the outside I have been unable to decide whether the hole was not there before and the honey-bee was not satisfying itself on the crumbs left from the stranger's table. On this occasion all the honey-gatherers were collecting from the outside, the pollen-gatherers only entered by the mouth. And I was satisfied, in all cases, that the holes had been made the day before by the humble-bee.

The corollas were now beginning to fall. The slightest jar of the tree sent numbers—literal snow-flakes—to the ground, and the bees were as busy as I ever saw them on the most favorite flowers collecting the nectar from the base of the now naked pistils. On branches where not a single corolla remained they were as active as if the perfect blossoms were still there. They had learned by experience that they could find what they wanted there. Though there was nothing but a slender pistil from a very inconspicuous base, the total absence of any bright color did not prevent them from alighting at the spot most convenient to them ; and it was evident that if the *Halesia* had never had a corolla at all, the bees would have been there all the same. Of course, color is an "approximate" guide to a bee as it is to us. In a basket of green apples that we had never seen before we should most likely try the most rosy-cheeked specimen first, only experience would teach us that a greening was as good as a Baldwin. It is so with bees. Accustomed to associate nectar with a blue *Lobelia*, and none with the faded flower, Mr. Darwin, if he had possessed as much faith as I have in the value of experience to a bee, would not have expected the creature to visit it after it had been led to believe the petals had fallen. If there had been honey in the calyx after the fading of the flower, as in the case of the *Halesia*, the bee would not have been so easily deceived ; and, as it was, I have that faith in a bee's sagacity that I fancy if Mr. Darwin had continued the work for a few days, and on a scale to make it worth while, the little creatures would have found out the trick.

THOMAS MEEHAN.

Carex Pennsylvanica and Carex varia.—Whether these sedges are simply varieties, one of the other, or whether each is a true species, continues to be a mooted question. Without entering into the literature of the subject, it may be said that Gray, in the last edition of his manual, guardedly states that they "seem to run together."

The latest that I have seen touching the question is a note by Dr. E. C. Howe, in the BULLETIN for July, 1881, wherein is advanced evidence to show that the two plants intergrade. Dr. Howe states that in a large series of specimens "separation becomes guesswork." But does not the Doctor mean that certain characters presumed to be diagnostic of one or the other plant do not always so prove. As to the interchange, between these sedges, of characters which have been regarded as distinctive of one or the other, I fully agree with Dr. Howe; but from this I deduce, not identity of the two plants, but simply that certain differential characters are less stable than our text-books may have led us to believe.

Perhaps there is no surer way of discovering the true relationship of allied or doubtful species, whether of plants or animals, than by comparative study of their earlier stages of development. According to a now familiar biological law we expect community of origin of differing types of life to be indicated by increased similarity as we compare at successively earlier stages of development. Indeed, in recently differentiated forms, we would look for practical identity up to a point in development close upon maturity.

An application of these principles to the two *Carices* now under notice goes to show, not only that they are distinct species, but that their ancestral relationship was in some respects more remote than is their present; for certain differences between the plants are more emphasized in the earlier stages of their growth that at any later period. I refer particularly to differences in the leaves, scales and bracts and the disposition of the spikes. This fact is a significant one, and one on which the specific validity of the plants may safely rest.

But I wish chiefly to call attention to important differences in the subterranean parts of the plants which our text-books fail to recognize: *Carex Pennsylvanica* differs conspicuously from *Carex varia* in having running, underground stems. These extend in all directions from the central plant, each fostering a succession of shoots, some of which themselves become centres of a secondary series of runners, which thus distribute a numerous progeny all about their parent. I have unearthed runners bearing at intervals of a few inches four or more generations of living shoots, together with the remains of several older generations. Hence the new shoots do not always become established as separate plants, but often remain joined by underground connection, through the two or three years that they